

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – SUMMER 2013****Subject Code: 171703****Date: 28-05-2013****Subject Name: Industrial Data Communication****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What are the features of smart instrumentation? Also Give brief introduction about OSI model. **07**
- (b) Explain media access control techniques of Data Link Layer of Profibus Protocol. **07**
- Q.2** (a) List out the common causes of industrial communication problems and write step wise procedure to troubleshoot the communication system. **07**
- (b) Explain electrical and mechanical characteristics of EIA-232 interface standards in short. **07**

OR

- (b) Explain half duplex operation of EIA-232 interface standard **07**
- Q.3** (a) Draw and give features of two wire multidrop network of EIA-485 interface standard. Give reason for connecting bias resistors in that network. **07**
- (b) Describe the important parameters for fiber optic cable? **07**

OR

- Q.3** (a) Describe the different ways that noise can be induced in EIA-485 circuit. **07**
- (b) Draw and Explain serial interface converter. **07**
- Q.4** (a) Give general overview of Modbus protocol. **07**
- (b) What is AS interface? Explain its physical layer. **07**

OR

- Q.4** (a) Describe the HART protocol. Draw HART Point to point and multidrop communication network. **07**
- (b) Explain SINAD and signal to noise ratio of Radio system with its measurement technique. **07**

- Q.5** (a) What are features and advantages of Foundation Fieldbus? Which are different four layers are implemented in Foundation Fieldbus. **07**
- (b) Give main features of Device net network. **07**

OR

- Q.5** (a) Give the format of IPv4 header of internet layer protocol and explain each bit of it. **07**
- (b) Write a shortnote on Industrial Ethernet. **07**
